DOCUMENT RESUME

ED 157 291 EC 111 776

AUTHOR Krantz, Gordon C.
TITLE A Left-Hemisphere Model for Right-Hemisphere Programmers.
PUB DATE Jun 78
NOTE 14p.; Paper presented at the World Congress on Future Special Education (First, Stirling, Scotland, June 25 - July 1, 1978)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS *Cerebral Dominance; Conceptual Schemes; *Handicapped Children; *Models; *Program Planning

ABSTRACT

The paper presents an action-and-decision (left-hemisphere) algorithm as a model for planning by holistic, intuitive (right-hemisphere) managers of service programs, including programs for exceptional children. Because the model is not based upon an established literature in the field of service to exceptional individuals, and because it appears to be useful, powerful, and somewhat technical, dialogue on the subject is proposed. (Author/SBH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

193
#9

ED157291

EC111776

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

JUL 2 7 1978

Title: A Left-Hemisphere Model for Right-Hemisphere Programmers

Author: Gordon C. Krantz, Ph D
Research Scientist, University of Minnesota
and
Educational Consultant in private practice
5209 Woodlawn Blvd
Minneapolis, MN 55417
(612) 724-3498

©

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

C.E.C.

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

Title: A Left-Hemisphere Model for Right-Hemisphere Programmers

Author: Gordon C. Krantz

ABSTRACT

The modern world, in which the holistic, intuitive (right-hemisphere) manager of service programs lives, requires operation within a formal, logical-sequential (left-hemisphere) service model. This situation requires the model to satisfy the needs and limitations of both styles, while permitting an effective and human program. This paper presents an action-and-decision algorithm as a model which is emerging to meet the requirement. Because the model is not based upon an established literature in the field of service to exceptional individuals, and because it appears to be useful, powerful, and somewhat technical, dialogue on the subject is proposed.

A LEFT-HEMISPHERE MODEL FOR RIGHT-HEMISPHERE PROGRAMMERS

Gordon C. Krantz, Ph.D.
University of Minnesota

The right hemisphere of the human brain, it is proposed by some, is concerned with those human activities that are holistic, simultaneous, and implicitly grasped activities. In other words, the proposition is that the right hemisphere is the portion of the brain that is dominant in the activities of a manager (Mintzberg, 1976).

The left hemisphere, according to this view, is the half of the human brain that is predominantly involved in those activities that are linear, analytic, and consciously logical. This is the hemisphere that is proposed as dominant in the activities of a planner or of a regulator or of the framer of a detailed piece of legislation.

This proposition about the hemispheres of the human brain may be overly simple. It does, on the other hand, provide a convenient shorthand for describing two kinds of people who tend to become responsible for the design and execution of service programs, including service programs on behalf of exceptional children and others who require the formal application of society's resources. The fact that both functions or both kinds of people are required in the modern world has become undeniable: programs have become complex and require increasing managerial attention; and complexity is based upon detailed requirements and technical developments that are too detailed and too mandatory to permit "seat of the pants" program design and monitoring.

Prepared for presentation at the First World Congress on Future Special Education at the University of Stirling, Stirling, Scotland, on June 25-July 1, 1978.

It takes managerial capability to reach a position of responsibility for the structuring and execution of a human endeavor such as a service program. Consequently, one should not be surprised if managers tended to be "right hemisphere" people. Some of them are sufficiently ambidextrous (one might say ambihemispheric) to also excel at the analytic approach and have the detailed technical grasp that is required in the modern world. Not many people are so fortunate. An expedient is to hire planning specialists and technicians, but this becomes expensive, and a technician on his own can be dangerous. On the other hand, failure to plan carefully results in even greater expense because of false starts, mistakes, oversights, and omission of required activities that are ultimately more costly than is the salary of even an expensive planner.

This paper does not propose to solve the entire problem of combining management and planning. It does, however, propose to describe one of the planning aids that is sufficiently broad as to warrant the attention of a manager and which is sufficiently precise to warrant its use as a planning tool. It is, to recapitulate the title, a left-hemisphere model that can be used for planning by right-hemisphere programmers.

Models have become a shibboleth, and their overuse may have led to a blurring of their meaning. Essentially, models are simplified representations of reality. They usually are representations of an ideal reality, and their purpose is to bring practice into better conformity with the ideal. It is required of a model that it be comparatively simple, that it be internally logical, that it be comprehensive enough to be compatible with the details of reality (though it need not spell out all those details), that it be instructive, and that it not lead the user into trouble.

Why are models so badly needed currently? In our field of work, models are necessary because the demands of the real world have become so many, so

interrelated, and each so imperative that some kind of unifying tool is needed in order for a service program to function effectively. The human mind, even using both hemispheres, is simply not able to retain and respond to all of the considerations that are built into the laws, regulations, manuals, and forms with which we now must deal (Dufour, 1977). Living with these systems and making them serve the needs of our clientele, while responding to the daily crises and idiosyncracies of service, requires a simplified and unified frame of reference in order to avoid confusion and oversight. Worse, without a simple unifying model, the individual manager or service provider can easily lose sight of the big picture and become over-attentive to a few aspects or options of the service system to the neglect of others.

Of several ways to make a unifying model of a service system, the one described here allows a pictorial representation as well as a text. It enables the use of a single model or master template for the selection and delivery of services to individuals, for the assignment of responsibilities and authority, for the allocation of program resources, for the accountability of both process and outcome, and for interface with other service systems.

Words like "interface" and "system" may be a bit alarming to a humanist. Perhaps the alarm is justified. There is no way to make a humane system. On the other hand, it is possible to design and describe a system in such a way as to enable individuals to be humane, just as it is possible to design a system so that humane activity is penalized. That whole consideration is a large and separate topic, but is applies here in that the model which is described is a system description and in that it can allow for a humane service design.

The model proposed here is an action-and-decision model. It has come into use in many places and with varying degrees of sophistication. It tends to emerge when a management information system is considered, because the information

manager wants to represent the reality of the service world in order to make a clear data representation of what is being done. The pictorial representation of the action and decision model is consequently similar to the system analysis that is drawn up by a computer programmer. The pictorial representation is a flow chart, dominated by rectangles which describe actions and diamonds which describe decisions. These models of service programs have been around for a long time, though they do not have a substantial literature apart from the analysis of data systems (International Business Machines, 1970), However, they are applicable to any service system in which there is a finite number of services that can be provided and some kind of decision rules as to when the services are applicable. This kind of model is, in its simplest description, an algorithm.

An algorithm "is a precisely stated procedure or set of instructions that can be applied in the same way in all instances of a problem" (Lewis and Papadimitriou, 1977). In the topic under discussion here, the "instances of a problem" are the actions and decisions that make up the program of services provided by a human service agency. Increasingly, caseload management algorithms are being used to describe the operations of services to exceptional children and handicapped persons, in the schools and in similar services.

The algorithm, the set of decision rules, is often depicted in a flow chart. Accompanying the flow chart is typically a series of paragraphs, with each paragraph referring to an element of the flow chart. It is at this point that the simplicity and the multiple uses of the model become apparent. Any one element can be described in terms of the activity or decision that it represents. Additionally, using the same layout and the same elements as a master template, one can describe for each element: the person in the service organization who is responsible for that activity or decision, the resources that are allocated to it, the time schedule that is required, the documentation that is required

or generated, and the management information that is built upon that element. For the last mentioned use, assuming that the model is a good one, it is only necessary to place a flow meter across each line on the diagram and a volume indicator in each element in order to create management information that reports what movement is taking place, and how many people are receiving each of the services.

To make this kind of model, it is first necessary to describe (often in dialogue between a right-hemisphere manager and a left-hemisphere planner, assistant, or consultant) every major activity or service provided by the organization. A statement like that sounds as though the list would be endless. In practice, however, it is a rare organization that does more than a dozen major things. Even if the major services or actions are each broken down into components, it is rare that any one of them will be made up of more than a half dozen sub-units. It has become this writer's practice to reduce any service program to no more than one page of master flow chart with no more than 20 elements including inputs, actions, decisions, connectors, and outputs. An organization whose activities require a larger master chart than that is probably not going to survive anyway (Gall, 1975).

After all of the activities have been identified, then the critical decisions or choice points must be described. This description requires the manager to state the possible options that can flow from the decisions and the basic decision rules that are involved or the identity of the person or group authorized to make the decision. In this last identification, the client is frequently included, and the nature of his participation should be spelled out. It is in describing the decision rules that the greatest care is required. The right hemisphere has to be satisfied that it is describing a constructive version of reality, and the left hemisphere has to be satisfied that it is understanding a logical formulation of reality. It is possible to state the decision rules in

terms that are dominated by the objective data, and it is equally possible and frequently profitable to describe the decision rules in terms of the professional judgment that must be made. This is where it is possible to allow a system to be humane without sacrifice of accountability.

Finally, after one has described the routes by which persons come into and exit from the responsibility of the service organization, and the necessary connections with other service systems, one has a complete description of the service system and can construct a model. Making the model is, frankly, hard work. It ought to be hard, because it requires thought to be taken. In making a model of an action-and-decision algorithm, the internal logic becomes clear because the flow chart allows only those things that have been described. This permits an examination of the logic of the service system itself. The consequences and details of any part of the model can be expanded and traced down. Building an action-and-decision model requires that the service program be completely examined, but the model making process facilitates this examination and gives it coherence.

The foregoing may sound as though building an action-and-decision model is too complicated to fall within the ability and temperament of a right-hemisphere manager. This is probably not true. It has been demonstrated that a group of directors of special education, none of whom had previously engaged in systems analysis, can learn the process in two days (Minneapolis Public Schools, 1976). It has further been shown that they can subsequently build models of their own systems well enough to satisfy themselves and to communicate with their staffs. For that matter, work-study coordinators have shown that they can analyze and describe the entire complex of vocational services to handicapped persons by this process (Krantz, Cleveland Public School, 1978).

As has been mentioned, this type of model has come into use in many places. One example is the special education system design used by the state of West Virginia (1975). This design is depicted in a flow chart that folds out to some four pages in length. Upon this basic template, the state bases some of its regulator activity and much of its reporting system. Another similarly detailed model is that of the California Child Find program, with its linkage to that state's special education model (California Bureau of Education, 1976). A system model which contains as many details, but which is depicted on several separate pages to facilitate understanding, was prepared for the Carver County Special Education Cooperative in Minnesota (Minnesota Valley Special Education Cooperative, 1977).

The Student Service System description (Jipson and Krantz, 1977) of the Pima County Special Services Cooperative in Arizona, although it is only 29 pages in length, plus an appendix of forms, is one of the more complete models in terms of its integration of state regulations, local policy, caseload control, and the specification of responsibilities for actions and decisions. It is represented as three subsystems: screening and identification, programming and placement, and instructional and monitoring subsystems. Its basic template is formulated around student movement through the service system or caseload management.

To illustrate this action-and-decision type of model, Figure 1 shows the Pima County Programming and Placement Subsystem. The text that accompanies this part of the system description consists of a number of paragraphs such as:

> 21. Develop I.E.P. (Individual Educational Program) This event is carried out under the responsibility of the placement committee. It consists of transforming the findings of evaluation into a synthesis of the needs and opportunities of the student. Its product is a written Individualized Educational Program (IEP). This program must meet the state standards. It is important to note that the student's program contains as one of its important components the placement. That is, program includes the specification of the placement.

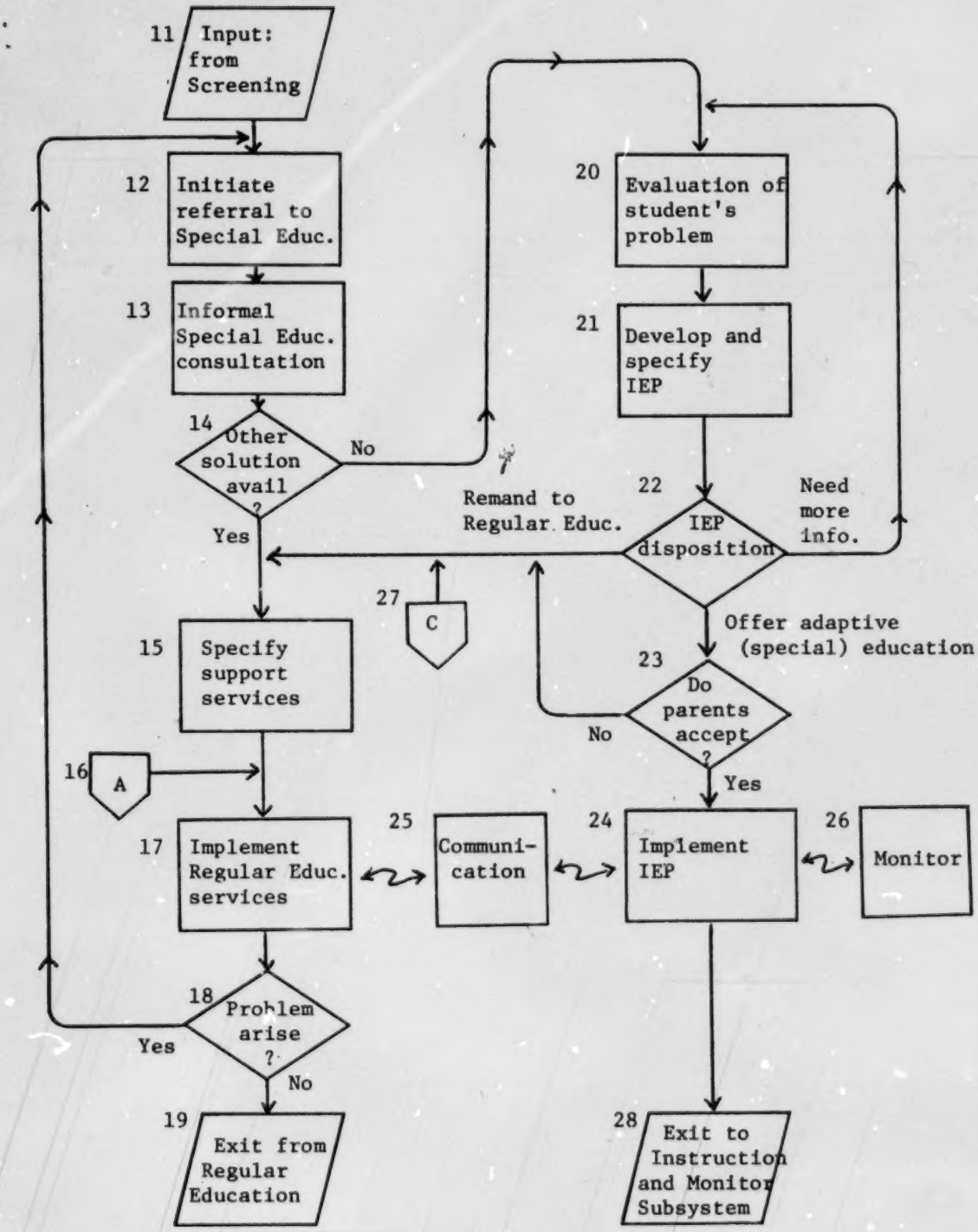

Figure 1. Illustration of a student flow paradigm in special education; Student Programming and Placement Subsystem adapted from Jipson and Krantz, 1977. In general in this school system, Operations 11 through 19 are the primary responsibility of regular education and Operations 20 through 28 are the primary responsibility of the special education unit.

In the Pima County model, the foregoing is followed by a decision described as:

> 22. Disposition? This decision is a three-option routing and it describes the major disposition given in the I.E.P. One option is to call for more information through a more intensive evaluation, in which case the entire process remains under the control of the placement committee. Another option is to remand to regular education in that the student, after thorough evaluation, is found to need something other than special education services. The third option is to offer special education services as described in the I.E.P.

In the Pima County model, caseload control and the responsibility for student accounting is managed by means of a single tracer document. The student is tallied at all times into one of seven statuses, and he can leave the system through one of six kinds of exits. A simple, hand managed set of file folders allows the special education director to know at any time if a student is not progressing normally through the system or if a deadline is about to be missed.

The Pima County model illustrates how an action-and-decision model can be applied in an intermediate unit that is midway in size between a state and a local education agency. In addition to organizations, it may be worth noting that this type of model can also be used to describe an overall technology, without limitation as to the organization that carries it out. The algorithmic model was used in the state-of-the-art document by which the Vocational Evaluation and Work Adjustment Association described the technology of vocational evaluation (Dunn et al., 1975). An orientation to the vocational services that apply to handicapped persons, embodied in an interactive computer program and in a text format, describes the services of diagnosis, preparation, outcome, and follow-along (Krantz, 1978). At the other end of the scale, this kind of model has been used to describe programs as small as one activity of a single project (Krantz, 1966) in order to be very specific in an analysis. Incidentally, it was in this last model that the term "cascade of services" was first used, because the diagram resembled a circuit diagram for cascaded transistors.

Additional descriptions and illustrations could be provided, but what has been presented here is probably the essence of the action-and-decision model. Because the model has come into use in describing services to exceptional persons, because it is subject to both apt and inept use, because it is analagous to but significantly different from its relatives in data system analysis, and because it is poorly covered in the professional literature of service to exceptional persons, this type of model ought to be analyzed and subjected to professional scrutiny. The use of models, including those of the action-and-decision type, is certain to proliferate under the current pressures upon service providers. This paper has been presented as a means for encouraging professional discussion of the subject.

References

California Bureau of Education. Child Find. Sacramento, 1976.

Dufour, Gerald. Competencies of Special Education Directors and Supervisors (unpublished dissertation). University of Minnesota, St. Paul, 1977.

Dunn, Dennis et al. "Vocational Evaluation Services in the Human Services Delivery System." VEWAA Bulletin (Special Issue), Volume 8, July, 1975.

Gall, John. Systemantics: How Systems Work and Especially How They Fail. New York Times Book Company, 1975

International Business Machines. Flowcharting Techniques. White Plains, N.Y.: IBM Technical Publications Department, 1970

Jipson, Fred and Krantz, Gordon. Student Service System. Tucson, Ariz.: Pima County Special Services Cooperative, 1977.

Lewis, Harry and Papadimitriou, Christos. "The Efficiency of Algorithms," Scientific American, January, 1978.

Krantz, Gordon. Case Flow Accounting in the School-Rehabilitation Program. Minneapolis, Minn.: Minneapolis Public Schools, June, 1966.

Krantz, Gordon. REHAB: Simulated Case Flow. Author, 1978.

Krantz, Gordon. Inservice training. Cleveland, Ohio: Cleveland Public Schools, 1978.

Minneapolis Public Schools. Developing a Student Study Subsystem: A West Metro Special Study Institute (Proceedings). Minneapolis, Minn.: 1976.

Minnesota Valley Special Education Cooperative. 1977-78 Plan for Special Education. Waconia, Minn., 1977

Mintzberg, Henry. "Planning on the Left Side and Managing on the Right." Harvard Business Review, July-August, 1976.

West Virginia Department of Education. Special Education Delivery Process. Charlestown, 1977.